CASE

OF

ELEPHANTIASIS.

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The following particulars of an extraordinary enlargement of the right inferior extremity will, I trust, be considered of sufficient interest to merit the attention of the Fellows of the Royal Medico-Chirurgical Society.

The patient, an unmarried female of dark complexion and phlegmatic temperament, first came under my notice in the autumn of 1843. The disease had then existed about twenty years, and commenced when she was in her eighteenth year. It began on the dorsum of the foot, having been preceded by several attacks of deep-seated pain in the part, attended with febrile symptoms. After the œdema appeared it became permanent, gradually but slowly extending up the leg. With the exception of an occasional return of the fever and pain, which she described as having been of a dull throbbing character and always followed by an increase in the swelling, she felt very little inconvenience from the disease for the first eight years, beyond what was occasioned by its bulk. As it extended along the thigh, however, the pain be-

came more severe, especially in the groin; and the integuments, which had hitherto preserved their natural colour, began to be the seat of frequent erysipelatous attacks. These, besides increasing the tumefaction, were attended by the oozing of a clear watery fluid from the inflamed skin, and by the formation of an incrustation on some parts of its surface. A few years ago a large ulcer formed on the inside of the thigh, and recently three others appeared near the ankle. Although a quantity of watery fluid mixed with pus has been regularly discharged from them, there has not been any diminution in the size of the limb. The pain formerly occurred only at intervals, and was generally relieved by leeches and fomentations; but within the last few years, it has become so constant that she has been compelled to resort to opiates for relief.

During childhood, and up to the period of the commencement of the complaint, her constitution was unimpaired, and she had a healthy appearance until she began taking opium regularly. Since then, she has lost flesh and the countenance has become sallow. Before coming to Salford, she had from birth resided at Bolton, about nine miles from her present residence. Her family, though of humble extraction, are remarkably healthy, and the only cause assigned for the disease is the sudden cessation of the catamenia from cold, since which they have never re-appeared.

The drawing, which was taken in 1845, is a representation of the disorder as it appeared for the last four years of the patient's life. During this period, probably in consequence of the existence of the ulcers, there was no apparent alteration in the dimensions of the limb. A cast indicating its size and singular external conformation may be seen in the Museum of the Royal College of Surgeons. The measurement round the calf of the leg was 2 feet 9 inches, above the knee 3 feet 4 inches, and at the upper part of the thigh, including the nates, 5 feet 6 inches. The integument on the upper surface above the knee was not altered in character, but from having yielded in some parts more than in others,

the leg had a somewhat lobulated form. Pressure did not leave the slightest indentation, nor was it in the least painful when touched, excepting below the knee and on the inside of the thigh, the situation of the former erysipelatous attacks. Here the skin was inflamed and continually moist. The fluid, which with a lens might be seen exuding from the sudoriferous ducts, had a slightly acid re-action, and under the microscope was found to consist principally of water, containing a few fat globules and granules, crystals of the chloride of sodium and epithelium-scales. Round the edges of the inflamed parts a thick incrustation was formed, which appeared to be caused by the drying up of the secretion, as it could be easily removed, leaving the skin underneath sound. The sole of the foot was the only part of the limb not implicated in the disease.

Her general health afforded no indication of having suffered. There was nothing, at any time, unusual in her appetite; bowels occasionally constipated; urine scanty and high-coloured, depositing a sediment which, when examined microscopically, generally consisted of crystals of urate of ammonia.

Though prevented from taking out-door exercise, she was able to go about the house and assist in the ordinary household duties, until within a few weeks of her death, which took place on the 21st of November last from an attack of dysentery. During the last few days of her life, there was considerable increase in the urinary secretion, sometimes amounting to eight pints in the twenty-four hours, and the discharge from the limb was much greater than on any former occasion.

On examining the body twenty-six hours after death, the enlargement was found to have been caused by the deposit of a dense white lardaceous substance, interspersed with fat, in the subcutaneous cellular tissue. When cut into layers, a small quantity of sero-sanguinolent fluid oozed out, and a few small vessels might be seen traversing its structure; but beyond their presence it did not present

any marks of vascularity. The cellular tissue beneath the superficial fascia was not at all affected. The muscles, though smaller than usual, preserved their natural appearance and situations. There was no enlargement of the bones or disease in the joints. The principal venous trunks were much larger than natural, distended like injected arteries and, when divided transversely, were patulous. Their external coat was thickened, and, except in a few places, the middle and internal one could not be traced, both having apparently been converted into a thick fibrous substance, disposed round the vessel in laminæ, not unlike what are observed in aneurismal tumours. The outer ones were of firm texture, of a pale brown colour, and connected to the external coat by fibrous bands. Those nearer the centre of the canal were soft, spongy, and had several flocculi on their surface. The same appearances existed in all the smaller veins in the diseased structure, which, when divided transversely, resembled arteries filled with coagula. Though considerable obstruction was offered to the passage of the blood through the principal veins, they were not completely obliterated in any part of their course. Several of the smaller ones, however, were impervious. The saphena was converted into a thick fibrous cord, and a large organized coagulum was found at its connection with the femoral vein. The arteries were small, and their coats thin. The nerves presented nothing unnatural, and the glands in the groin could not be traced.

On opening the abdomen, the diseased state of the veins was found not to have extended beyond the groin; those of the pelvic cavity were healthy, and the uterine organs sound, excepting that a small cyst, about the size of a walnut, was attached to the left ovary. The liver was small but normal. The spleen was slightly enlarged, and in a complete state of hepatization. The heart, lungs and kidneys were healthy. The lardaceous substance was submitted to the action of boiling water for upwards of sixteen hours, but yielded no gelatine. A portion, after being boiled in ether which ex-

tracted numerous fat globules, presented a cellular structure under the microscope. Another portion, that had not been acted upon by any chemical re-agent, appeared, with a magnifying power of 400 diameters, to consist of nucleated fibres, epithelium-scales, fat globules and granules. The skin was also carefully examined, but beyond slight hypertrophy of the epidermis and cutis nothing unusual was detected.

Though cases occasionally occur in this country resembling in a mild degree the Arabian elephantiasis, I am informed by several medical friends who saw my patient, and who had witnessed the disease amongst the natives of South America and the West Indian islands, that even there the tumefaction seldom attains so great a size as was observed in the case now related.

The *post-mortem* examination tends to show that the disease commenced in the veins, being probably the result of repeated attacks of inflammation of the capillaries, which gave rise to the pain and febrile symptoms in the earlier stages of the complaint. From the local nature of the pathological changes, the deposit found in the veins would appear not to have been formed immediately from the blood, but from the effusion and consolidation of lymph in their coats, the coagulation of the blood in the folds of the flocculi contributing to fill up the calibre of the vessels.

Several authors on elephantiasis allude to a morbid condition of the veins; and Dr. Wise* has written an excellent paper to point out that it is produced by inflammation of them. He says, "When the groin and thigh are examined in the acute stage, a swelling may be discovered, which extends to the knee-joint, or even to the foot, following in this course the various branches, and is indicated by the

* Transactions of the Medical and Physical Society of Calcutta, vol. viii. 1835.

pain and sensibility of the part on pressure: the neighbouring cellular tissue of the thigh and leg is swelled, over which a net-work of veins frequently appears, having, in some places, a hard, round, cord-like feel, with an erysipelatous blush of inflammation over the course of the veins thus affected. The state of these vessels are best observed in the acute primary attacks of the disease. In one case, I found, after a paroxysm, the trunk of the saphena major vein prominent on the bent knee-joint, with a hard cord-like feel, and a swelling upon the anterior part of the leg, from which many branches of the vein affected, during the paroxysm, had arisen."—P. 159.

He further observes, "I have endeavoured to avail myself of opportunities of examining elephantiasis in its different stages, but especially in its primary invasion, and am confirmed in my opinion that elephantiasis is produced by an inflammation of veins. When so affected, a consolidation of blood takes place in the trunks, which extends to the smaller branches and impedes the circulation in the part."—P. 178.

Dr. Towne* also remarks that the veins in the vicinity of the inflamed part during the acute attack "are found much distended with varicose swellings, which are very apparent from the knee down to the extremity of the toes."

It may, therefore, be inferred that the disease is the consequence of phlebitis, which, though usually regarded as being prone to terminate in suppuration, (probably from its frequent occurrence as a secondary disease,) where it exists as a primary affection, or the predisposition to it has not been induced by causes having a tendency to assume a typhoid or purulent character, is generally arrested at the adhesive stage.

Occasionally, as in the present case, the venous trunks

* Treatise on Diseases the most frequent in the West Indies. Lond. 1726.

afford no indication of being affected in the earlier stages,* the inflammation apparently commencing in the capillaries, and remaining for some time limited to them; consequently, if, under such circumstances, the limb be not carefully examined, the true nature of the complaint may escape detection. It is, probably, on this account, and the limited opportunities which pathologists have had of dissecting the parts affected, that so much discrepancy exists respecting its origin.†

The conflicting opinions respecting phlegmasia alba dolens may also admit of a similar explanation; the disease originating in the venous capillaries in those instances where no abnormal appearances have been found in the femoral or iliac veins, and the previously existing derangement of the system during the puerperal state having led to its development, as wounds cause phlebitis in parts remote from the seat of injury: where the femoral or iliac veins have been obliterated without any distinct manifestation of the complaint having extended from the uterus, the capillaries or even the larger vessels themselves may have been the part of the venous system primarily attacked; the affection assuming the acute form, puerperal phlebitis, or the chronic, phlegmasia alba dolens, according to the septic power of the causes which have given rise to it.

The albuminous substance sometimes met with in the cellular tissue of infants, presents characters somewhat analogous to what is observed in elephantiasis; the congested state of the veins which usually accompanies it showing, that in all probability it arises from some morbid alteration in them.

It would appear, therefore, that the immediate cause and

* In other cases, the local inflammation is confined to the foot and leg, which become swelled, hot, and pit on pressure; while the lymphatic vessels and glands of the thigh and groin continue without any apparent change.—Wise, *l. c.*, page 159.

† Chevalier, Med.-Chir. Transactions, vol. ii. 1811. Alard, Observations (Nouvelles) sur l'Elephantiasis des Arabes. Paris, 1811.

pathological changes of elephantiasis bear an intimate relation to those of phlegmasia dolens, and the induration of the cellular tissue in new-born children; the apparent differences depending on the degree of venous obstruction and on the remote influences which have originated it.

EXPLANATION OF PLATE I.

This plate represents the appearance exhibited by the diseased limb in Mr. Southam's patient, during the last four years of her life.

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